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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,735	08/01/2001	Venkata Guruprasad	YOR9-2001-0025US2 (8728-4)	4318
46069	7590	03/07/2005	EXAMINER	
F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			JUNTIMA, NITTAYA	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	Application No. 09/919,735	Applicant(s) GURUPRASAD, VENKATA	
	Examiner Nittaya Juntima	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/1/01.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 and 19 is/are allowed.
- 6) ☒ Claim(s) 1, 8-10, 16-17 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 11-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Oath/Declaration***

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: should priority benefit of U.S. Provision Application No. 60/260/595, filed on 1/9/2001 be claimed as indicated in the preliminary amendment dated 8/22/2001, a new oath/declaration with such indication is required.

### ***Drawings***

2. The drawings are objected to because numeral references in Figs. 1-16 required descriptive text labels.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

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application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities: the U.S patent application serial number on page 1 of the specification is missing, and the status of the U.S. patent application requires an update.

Appropriate correction is required.

### ***Claim Objections***

4. Claims 4, 6, 9, 14, 16-18, and 20 are objected to because of the following informalities:

- in claim 4, ll 5, "the aggregation" should be changed to "an association," see page 36, ll 10-11 of the specification;

ll 6, "the" should be changed to "a";

- in claim 6, ll 4, "the" should be changed to "a";
- in claim 9, ll 3, "path connections" should be changed to "paths";
- in claim 14, ll 2, "that" should be changed to "at";

ll 3, "signal," should be changed to "signal that";

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    Il 4, “by a tunnel released” should be changed to “to release the tunnel” in order to put the claim in a better form, see specification on page 25, Il 9-15 and preamble of claim 16;

- in claim 16, Il 6, “the virtual” should be changed to “virtual”;

    Il 13, “the” should be changed to “a”;

- in claim 17, Il 4, “the event” should be changed to “an event”;
- in claim 18, Il 4, a semicolon should be changed to a colon;

    Il 6, “the virtual” should be changed to “virtual”;

    Il 9, “the tunnel” should be changed to “a tunnel”;

- in claim 20, Il 6, “paths” should be changed to “path connections,” see Il 3 of the claim.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16, Il 17-18, “the first list” and “the second list” lack antecedent basis.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1, 10, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. ("Chen") (USPN 6,353,593 B1).

Regarding claim 1, Chen teaches a method (Fig. 3) comprising the steps of:

(step 80) Discovering, automatically, portions of the virtual paths (VCCs 36, Fig. 1) that run parallel to one another (VCCs 36 destined for the same destination node 34 are received at the source node 36, Fig. 1, col. 3, ll 57-col. 4, ll 7, and col. 6, ll 10-20).

(step 84) Constructing a first tunnel (VPC 38, Fig. 1) along parallel virtual paths between the first switch (the source node 30, Fig. 1) and a terminating switch (the destination node 34, Fig. 1) (VPC 38 must be constructed between the source and destination nodes 30 and 34 in order for the VCCs 36 to be combined into VPC 38, col. 6, ll 22-28).

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(step 84) Aggregating the parallel virtual paths into the first tunnel (col. 6, ll 22-28).

Regarding claim 10, as shown in Fig. 1, Chen teaches that a network (10) including a second tunnel (not defined, reads on the combined destination links which VCCs 36 received at the destination node 34 are connected to, col. 4, ll 8-21) at the terminating switch (the destination node 34) to which all virtual paths (VCCs 36) emerging from the first tunnel (VPC 38) are redirected at the terminating switch, further comprising the step of concatenating the second tunnel to the first tunnel (the VPC 38 must be concatenated to the destination links in order for the VCCs 36 carried by VPC 38 to be routed on the destination links to their destination, col. 4, ll 8-21).

Regarding claim 20, as shown in Fig. 1, Chen teaches a switched network (10) comprising:

A plurality of switches (source node 30, intermediate nodes 32, and destination node 34).

A plurality of virtual path connections (VCCs 36) passing from a first switch (source node 30) through at least one intermediate switch (intermediate node 32) and to a terminating switch (destination node 34), wherein at least one (source node 30) of the switches initiates automatic discovery and aggregation of parallel portions of the virtual path connections (VCCs 36) into at least one tunnel (VPC 38). See col. 3, ll 39-col. 4, ll 7 and col. 6, ll 10-32.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. ("Chen") (USPN 6,353,593 B1).

Regarding claim 8, Chen fails to teach that the discovery, tunnel construction and aggregation are performed recursively treating the tunnels as candidates for further aggregation.

However, since Chen teaches the discovery, tunnel construction and aggregation (see rejection of claim 1) and treating the tunnel (VPC 38, Fig. 1, col. 6, ll 22-28) as a candidate for further aggregation (VPG 40 may or may not be aggregated into VPG 40, Fig. 1, col. 6, ll 28-31), it would then have been obvious to one skilled in the art at the time the invention was made to include that the discovery, tunnel construction and aggregation are performed recursively treating the tunnels as candidate for further aggregation as recited in the claim. The suggestion/motivation to do so would have been to accommodate traffic increase and/or additional new paths established between other two endpoints in the network.

Regarding claim 9, Chen fails to teach that the discovery, tunnel construction and aggregation are performed periodically, maintaining an overall degree of aggregation and table size reduction as the virtual paths are closed and new virtual paths are opened by end system applications.

Regarding closing and opening of the virtual paths, an official notice is taken that the virtual paths, e.g. VCCs 36 in Fig. 1 of Chen, may be terminated and new virtual paths may be established by end system applications, e.g. end users at network 14, in order to accommodate changes in user/network requirements.



In addition, because Chen teaches that the discovery, tunnel construction and aggregation (see rejection of claim 1), and a maintenance of a degree of aggregation (VCCs 36 bundled into VPC 38, col. 6, ll 22-32) and a table size reduction (inherent address translation table to assist in routing and management must be maintained and reduced in size since VCCs are grouped into VPC, col. 3, ll 61-col. 4, ll 7, 18-21), therefore, it would have been obvious to one skilled in the art at the time the invention was made to include that the discovery, tunnel construction and aggregation are performed periodically, maintaining an overall degree of aggregation and table size reduction as the virtual paths are closed and new virtual paths are opened by end system applications as recited in the claim. The suggestion/motivation to do so would have been to reflect a change in network topology due to a change in user/network requirements and to provide accurate and efficient routing.

***Allowable Subject Matter***

10. Claims 2-7 and 11-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claim 16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

12. Claim 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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13. Claims 18-19 are allowed. The prior art alone or in combination fail to teach or make obvious on the allocation at each preceding switch a path table entry for each index listed in the release signal and setting the outgoing index switch for that entry with the listed index and the next switch on the tunnel path, respectively, when considered in combination with other limitations in the independent claim 18.

### *Conclusion*

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Nagami et al. (USPN 6,683,874 B1), disclosing a label switched path control method for reducing the number of label switched paths to be set up.

- Ohba et al. (USPN 6,501,754 B1), disclosing MPLS, flow entry table, path set up and release methods.

- Chin et al. (USPN 6,163,543), disclosing redundant link aggregation.

- Bryden et al. (USPN 6,717,944 B1), disclosing mapping of the virtual circuits to the tunnel.

- Feldman et al. (USPN 6,069,889), disclosing aggregation of flows onto a single connection.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 571-272-3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nittaya Juntima  
February 25, 2005

  
RICKY NGO  
PRIMARY EXAMINER

3/3/05